LENNTECH
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# E-Cell* MK-3MiniHT Stack

## Hot Water Sanitizable E-Cell for Lab & Pharmaceutical Applications

E-Cell MK-3MiniHT is the only lab & pharmaceutical electrodeionization (EDI) stack designed to:

- Provide ultrapure water for pharmaceutical applications.
- Hot water sanitizable up to 185°F (85°C) for 160 cycles.
- Operate with no concentrate recirculation and no brine injection.
- Require no stack bolt tightening.
- Be leak free, guaranteed.
- Operate with low power, <150VDC.

### Description and Use

E-Cell MK-3MiniHT stacks are hot water sanitizable EDI stacks which use electrical current to deionize and polish reverse osmosis (RO) permeate water. The product water for the MK-3MiniHT is at greater than USP quality levels required in today's Pharmaceutical applications.

### Typical Application

- Pharmaceutical
- Laboratory

### Quality Assurance

- CE, UL & CSA marked
- Manufactured in a ISO 9001:2000 facility

| MK-3MiniHT Stack Specifications | | |
|---|---|---|
| Nominal flow | 1.14 $m^3/h$ | 5.0 gpm |
| Flow rate range | 0.5 to 1.52 $m^3/h$ | 2.2 to 6.7 gpm |
| Shipping weights | 49 kg | 107 lbs |
| Dimension (width x height x depth) | 30cm x 61cm x 28cm | 12" x 24" x 11" |

Actual performance may vary depending on site conditions. Consult E-Calc projection software to verify actual performance. Patents pending.

| Typical Performance | | |
|---|---|---|
| **Product Quality** | | |
| Resistivity | > 10 MOhm-cm | |
| TOC (as C) | < 500 ppb | |
| **Hot Water Sanitization** | | |
| No. of 1hr sanitization cycles | 160 cycles | |
| Sanitization temperature | 176 to 185°F | 80 to 85°C |
| Max. sanitization inlet pressure | 2.1 bar | 30 psi |
| **Operating Parameters** | | |
| Recovery | Up to 93% | |
| Concentrate flow | Counter current - Standard<br>Co-current – <0.1ppm (as $CaCO_3$) feed hardness | |
| Voltage | 0 to 150 VDC | |
| Amperage | 0 to 5.2 ADC | |
| Inlet Pressure (Counter current)<br>(Co-current) | 4.1 to 6.2 bar<br>3.1 to 6.2 bar | 60 to 90 psi<br>45 to 90 psi |
| Pressure drop at nominal flow | 1.4 to 2.4 bar | 20 to 35 psi |

| Maximum Feedwater Specifications | | |
|---|---|---|
| Feedwater - Total Exchangeable Anions (TEA as $CaCO_3$) | <25 mg/l | <25 ppm |
| Feedwater – Conductivity, $NaHCO_3$ equivalent | < 43 µS/cm | < 43 µS/cm |
| Temperature | 4.4 to 40°C | 40 to 104°F |
| Total hardness (as $CaCO_3$) | < 1.0 mg/l | < 1.0 ppm |
| Silica ($SiO_2$) | < 1.0 mg/l | < 1.0 ppm |
| Total Organic Carbon, TOC as C | < 0.5 mg/l | < 0.5 ppm |
| Total Chlorine | < 0.05 mg/l | < 0.05 ppm |

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